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Impacts of 'Three Strikes and You're Out' on Crime Trends in California and throughout the United States

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Abstract

The impacts of Three Strikes on crime in California and throughout the U.S. are analyzed using cross-sectional time series analysis of state-level data from 1986 to 2005. The model measures both deterrence and incapacitation effects, controlling for pre-existing crime trends and economic, demographic, and policy factors. Despite limited usage outside California, the presence of a Three Strikes law appears to be associated with slightly but significantly faster rates of decline in robbery, burglary, larceny, and motor vehicle theft nationwide. Three Strikes is also associated with slower declines in murder rates. Although California's law is the broadest and most-frequently-used Three Strikes policy, it has not produced greater incapacitation effects on crime than other states' far more limited laws. The analyses indicate that the "toughest" sentencing policy is not necessarily the most effective option.

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Introduction

Between the years 1993 and 1997, "Three Strikes and You're Out" sentencing laws were passed in twenty-four American states and the federal justice system.[1] Three Strikes laws mandate long sentences for certain habitual offenders, usually 25 years to life in prison for third-time violent offenders. Three Strikes statutes vary widely in their details, such as the type and number of offenses that trigger the law's application, the prior offenses that qualify as "strikes," and the penalties associated with second and third "strikes" (Austin, Clark, Hardyman, & Henry, 1999; Austin, Jones, Naro, & Cohen, 1996; Clark, Austin, & Henry, 1997). The broadest and farthest-reaching Three Strikes statute was enacted by the state of California in 1994. As of October 2005, over 87,500 individuals had been sentenced under the second- and third-strike provisions of California's Three Strikes law, including over 7,500 offenders who received a sentence of twenty-five years to life in prison for a third strike (Legislative Analyst's Office, 2005). Because of its scope, California's law has been associated with tremendous monetary and social costs. This paper examines whether the law has produced commensurate reductions in crime that would justify the costs and consequences associated with a policy of its breadth.

Prior Research on Three Strikes and its Impacts on Crime

Several studies of Three Strikes laws in California and elsewhere have been published since the mid-1990s. One of the earliest studies, conducted at RAND before Three Strikes took effect, predicted that California's broad policy could reduce crime by about twenty-five percent in the state, at a cost of about $5.5 billion per year, but that the benefits and the costs would

[1] A "Three Strikes"-type law was also passed in a twenty-fifth state, Alaska, in 2006.

depend on full implementation of the law, which the RAND researchers did not anticipate (Greenwood et al., 1994).

Not long after the law went into effect, supporters of Three Strikes pointed to dramatic declines in California's crime rates following the law's passage and claimed that Three Strikes deserved credit for the changes (Ardaiz, 2000; Lungren, 1996, 1997; Reynolds, 1995). Mike Reynolds, a former wedding photographer whose daughter's murder had inspired him to co-author the California Three Strikes law and campaign for its passage, stated bluntly, "the results are in and the debate is over. The numbers prove that when you get tough, you get results" (Reynolds, 1995). In a 1998 report, California Attorney General Dan Lungren credited the law for California's 20.2 percent total crime drop, and the 13.8 percent decline in violent crime from 1994 to 1997 (Lungren, 1998). Revisiting the issue in a 2005 report, Reynolds cited a 46 percent decline in the index crime rate from 1992 to 2002 and again asserted that the data proved the law's success, proclaiming, "the reduction in crime that occurred after the passage of 3-Strikes speaks for itself… any objective assessment would credit 3-Strikes with playing a major role in California's record crimes *[sic]* drops" (Reynolds, 2005).

On the other side of the issue, opponents have asserted that Three Strikes has caused little or no impact on crime. A 1999 study released by the Justice Policy Institute (Males, Macallair, & Taqi-Eddin, 1999) criticized the law strongly, calling it a "failure" and concluding that it had had no effects on crime because declines in crime were not especially pronounced for (1) states with Three Strikes, (2) counties in California reputed to apply the law particularly strictly, or (3) the over-thirty age group, which ought to have been impacted most by Three Strikes. The study compared changes in crime rates in two time periods, 1991-93 (before 3 Strikes) and 1995-97 (after 3 Strikes) (Males et al., 1999; Schiraldi, Colburn, & Lotke, 2004).

The simple before-and-after comparisons used by these advocates and critics of the law are easy to comprehend but lack methodological rigor. They fail to account for important factors, such as the fact that crime rates had begun to decline before Three Strikes was introduced, and they omit other key variables that influence crime rates.

More sophisticated analyses have been conducted by academic researchers, producing a wide range of conclusions. Employing a two-stage least squares model to analyze California county-level panel data from 1983 through 1996, Shepherd (2002b) concludes that the two- and three-strikes provisions of California's law resulted in significant deterrent effects on murder, assault, robbery, and burglary rates.[2] In contrast, other scholarly studies, using various data sources and methodologies, find that the law's impacts on crime have been modest (Stolzenberg & D'Alessio, 1997; Zimring, Kamin, & Hawkins, 1999), nonexistent or undetectable (Austin et al., 1999; Beres & Griffith, 1998; Males et al., 1999), or even counterproductive. Some researchers have concluded that the laws have resulted in an increase in homicides as offenders facing strikes sentences seek to evade law enforcement authorities or eliminate witnesses (Kovandzic, Sloan, & Vieraitis, 2002, 2004; Marvell & Moody, 2001). Studies also link Three Strikes to other actual or predicted unintended consequences, such as strain on local law enforcement operations, jail systems, and courts (Austin, 1994; Austin et al., 1999; California Youth and Adult Correctional Agency - Board of Corrections, 1996), prison overcrowding and increased rates of release from prison (Dickey, 1996, 1998), and escalating costs in the long-term as affected prisoners grow older and require more expensive care (Auerhahn, 1999, 2002; R. S. King & Mauer, 2001; Schmertmann, Amankwaa, & Long, 1998). Finally, some scholars have pointed out that mandatory sentences like Three Strikes have led to tremendous social costs, such

[2] Shepherd's study also found a statistically significant increase in larceny rates.

as those associated with mass incarceration of offenders and their eventual re-entry to society (Mauer & Chesney-Lind, 2002; Travis, 2002; Travis & Waul, 2003).

Several reports completed in the 1990s and early 2000s include the caveat that sufficient data to measure the law's full impacts on crime might not be available for several years, particularly because the incapacitation effects associated with lengthy mandatory sentences would only be observed after affected offenders completed the sentences they would already have faced in the law's absence (Austin et al., 1999; Greenwood et al., 1994; J. R. Ramirez & Crano, 2003). Now that more than a decade has passed since the law's adoption, sufficient post-implementation data exist to conduct more rigorous analyses. Ramirez and Crano (2003) use ARIMA and regression models to analyze monthly statewide crime and arrest data from California for the years 1983 to 1998. Controlling for pre-existing crime trends, they detect few immediate impacts of Three Strikes, some deterrence and incapacitation effects over time for violent and premeditated "instrumental" offenses and for "minor" crimes not targeted by Three Strikes, and no impacts on drug offenses. Worrall's 2004 study uses a cross-sectional time series model with fixed effects for years and counties to examine Three Strikes' effects using data on California's counties from 1989 to 2000. In contrast to Ramirez and Crano (2003), Worrall's investigation finds that the law has "virtually no deterrent or incapacitative effects on serious crime" once county fixed effects are taken into account (Worrall, 2004). Kovandzic, Sloan, and Vieratis (2002, 2004) apply cross-sectional time series analysis to data for 188 cities in the United States from 1980 to 2000. In their 2004 study, the authors find that while significant declines in crime trends could be found for some offenses in some states in the aftermath of Three Strikes' adoption, significant increases could be found in roughly the same number of states, suggesting either that the findings were either random statistical artifacts or that the law

has both positive and negative impacts that cancel each other out on the whole (Kovandzic et al., 2004). The only exception to this finding was for rates of homicide, for which more significant increases than declines were found (Kovandzic et al., 2004).

Contributions of the Present Study to the Literature

This paper examines the effects of Three Strikes on crime not only in California, but also throughout the nation, using state-level data for all fifty states. The methods used in this paper are similar to those used in some of the more methodologically sophisticated recent studies (e.g. Worrall 2004, Kovandzic, Sloan, and Vieraitis 2004), but here they are applied to state-level, rather than city-level, data. The dataset includes statistics from the years 1986 through 2005. This twenty-year time series provides the opportunity to model trends in crime and other variables for eight or nine years before, and eleven or twelve years after, the implementation of Three Strikes in most states (most of the laws were passed in 1994 or 1995). The analysis consists of regression models applied to cross-sectional time series data with state and year fixed effects. The inclusion of state fixed effects makes it possible to account for the underlying variation in crime rates between states. As demonstrated by Worrall (2004) using county data, omission of pre-existing unit-level trends from time-series analyses can lead to misleading results. Year fixed effects account for nationwide crime trends that may be associated with factors not directly included in the model. Additional variables representing individual state-level crime trends are also included for states that adopted Three Strikes as well as non-adopting states. If these trends are not incorporated into the analysis, the impacts of Three Strikes are likely to be overestimated because crime rates had begun to drop even before Three Strikes was passed in most jurisdictions, and crime fell in jurisdictions without Three Strikes laws as well as in those that did pass them. Alternative explanations that have been cited to explain changes in

crime rates are also taken into account by including relevant economic, demographic, budget, and alternative policy variables in the model.

Comparison of Three Strikes Statutes in California and Other States

"Three Strikes and You're Out" and other habitual offender mandatory sentencing laws exist in half of the American states. The laws and the years in which they were adopted are summarized in Table 1 below.

[Table 1 about here]

While Three Strikes laws have punishment and deterrence among their goals, these policies are also based, in part, on the idea that a small proportion of habitual offenders commit most crimes, and that incarcerating the most active and incorrigible criminals will therefore dramatically improve public safety.[3] "Selective incapacitation," as this approach has been called, seeks to target the most dangerous offenders and design sentencing policies to incarcerate them during their most crime-prone years (Auerhahn, 1999, 2003; Gottfredson & Gottfredson, 1994; Greenwood & Abrahamse, 1982). Policymakers have not reached a consensus among regarding the most effective approach to selective incapacitation. The number of offenses that trigger a "strike" charge, the categories of crimes that count as strikes, and the sentences mandated upon conviction vary from state to state (Caulkins, 2001; Clark et al., 1997).

California's version of the law differs markedly from statutes adopted elsewhere. California's Three Strikes policy consists of two primary components. First, if a defendant has a

[3] In their seminal study, *Delinquency in a Birth Cohort*, Wolfgang and colleagues found that a small group of "chronic offenders," constituting about 6 percent of males born in 1945 in Philadelphia, were responsible for over 50 percent of the crimes committed by members of the entire group (Wolfgang, Figlio, & Sellin, 1972).

prior serious or violent felony conviction (i.e. “strike”) and is convicted of any subsequent felony, the sentence for the current felony is automatically doubled (Legislative Analyst's Office, 2005). This is often referred to as the “second strike” provision. Second, if a defendant has two or more strikes, any subsequent felony conviction carries a mandatory “third strike” sentence of twenty-five years to life in prison (Legislative Analyst's Office, 2005). In California, twenty-one violent felonies, listed in California penal code section 667.5(c), and forty-two serious felony offenses, attempted offenses, or enhancements, listed in California penal code section 1192.7(c) (with some overlap between these two groups), can count as strikes. The law requires a state prison term (rather than jail or probation), restricts “good time” credits to twenty percent, and prohibits plea bargaining. The key difference between California and other states is that the offender’s current crime need not be serious or violent. About five hundred different felony offenses can set the second- or third-strike provisions of the law into motion (Moore, 1999).

By August 1998, California had sentenced had 40,511 offenders, including 36,043 second-strikers, under the law (Dickey, 1998). In comparison, Washington, the first state to pass a Three Strikes statute, had sentenced approximately 120 third-strike offenders and three second-strike offenders under its more restrictive law (Dickey, 1998). Most other states and the federal system had sentenced even fewer prisoners (Gatland, 1998; McMurry, 1997). The relatively narrow Three Strikes laws in most jurisdictions limit strikes-eligible offenses to a small number of violent felonies, and require three violent convictions to trigger a mandatory sentence. In some states, the law can be set into motion by more or fewer strikes. Maryland’s law, for example, mandates life without parole when an offender accrues four strikes from a short list of violent felonies, and requires that separate prison terms were served for the first three offenses (Clark et al., 1997). Georgia’s law stipulates life without parole after the *second* violent felony

conviction from a list of specified offenses. However, far fewer offenses are covered by Georgia's law than by California's (Clark et al., 1997). By the middle of 1998, three states that had implemented Three Strikes in 1994 or 1995 had not yet sentenced *any* offenders under the law, twelve other states had a dozen or fewer Three Strikes convictions, and the federal system had sentenced only 35 offenders under its version of Three Strikes (Dickey, 1998).

Telephone and e-mail interviews with state criminal justice authorities conducted from September through November 2006 found that after more than a decade in place, Three Strikes still had not been used with great frequency in states other than California, because few offenders were eligible to be charged under the far more restrictive terms of most states' Three Strikes laws. Washington had sentenced 281 offenders under its Three Strikes statute and 66 offenders under a Two Strikes provision (State of Washington Sentencing Guidelines Commission, 2006). Nevada had 349 "habitual offenders" in its corrections system, and the South Carolina Department of Corrections reported seventeen inmates sentenced under its Three Strikes legislation and 334 inmates sentenced under the state's Two Strikes legislation as of June 30, 2006.[4] The Virginia Dept of Corrections reported 316 "three time losers" including individuals convicted of murder, robbery and drug offenses out of 35,000 classified inmates as of Dec 30, 2005.[5] Pennsylvania's "repeat offender mandatory sentences – second, third, and subsequent

[4] Personal communication by e-mail from Alejandra C. Livingston, Economist III, Statistics & Planning, Nevada Department of Corrections (October 6, 2006); e-mail from Deanne Williams, South Carolina Department of Corrections, Division of RIM (October 12, 2006).

[5] Telephone interview with Helen Hanshaw, Research Division, Virginia Department of Corrections (September 12, 2006).

strikes – have rarely been imposed," with "only about ten to fifteen cases per year."[6] The Arkansas Department of Correction housed 56 Three Strikes inmates, North Carolina reported twenty-six convictions up to July 31, 2006, Wisconsin had twenty-five cases, Tennessee had twelve, and other states had also made sparing use of the law, with only eight inmates in New Jersey and three in Vermont serving "Three Strikes" sentences, and five inmates sentenced under Maryland's "Four Strikes" law.[7] Nine "Three-Time Felony Offenders" and five "Repeat Sexual Batterers" had been sentenced under Florida's law, which also includes separate provisions for drug trafficking and offenses against law enforcement officers and senior citizens.[8] Alaska reported two Three Strikes cases, Connecticut reported one case, and Montana and Utah reported

[6] Personal communication by e-mail from Douglas E. Hoffman, Director, Center for Research, Evaluation, and Statistical Analysis, Pennsylvania Commission on Crime and Delinquency (September 15, 2006).

[7] Dr. Mike Cannon, Research and Planning, Arkansas Department of Correction; Richard Burkhart, North Carolina Policy and Development Analyst II; Kristi Waits, Wisconsin Sentencing Commission; Mike Gasiecki, Statistical Analyst Supervisor, Tennessee Dept. of Correction; Matthew Schuman, New Jersey Department of Correction; John Perry, Vermont Department of Corrections; Robert Gibson, Director, Planning and Statistics, Maryland Department of Public Safety and Correctional Services. Personal communication via telephone and e-mail received between September 13, 2006 and September 27, 2006.

[8] "Of the inmate population on June 30, 2006, a total of 2,547 offenders have been sentenced to Florida's prison system under one or more of the provisions of the Three Time Felony Offender Law." Aside from the nine Three-Time offenders and five "Repeat Sexual Batters," the vast majority (2,398) were incarcerated for "Drug Trafficking," 114 were sentenced under other sections regarding aggravated assault or battery on a law enforcement officer, and the rest (21) had violated another provision protecting senior citizens from assault and battery. Florida statistics and quotation provided by David Ensley, Bureau of Research and Data Analysis, Florida Department of Corrections, July 17, 2006.

that their Three Strikes laws had never been used.[9] Every state other than California reported fewer than 400 second- and third-strikes convictions since the passage of Three Strikes. In contrast, by the end of 2003, a total of 80,087 second-strikers and 7,332 third-strikers had been admitted to the California Department of Corrections and Rehabilitation (California District Attorney's Association, 2004). The total has most likely exceeded 100,000 "strikers" by now.

California's Three Strikes policy is particularly atypical in that it is widely applied towards nonviolent offenders. As of 2005, thirty-seven percent of second- and third-strike offenders had been incarcerated for "crimes against persons," thirty percent for property crimes, twenty-three percent for drug offenses, and ten percent for other offenses such as weapons possession (Legislative Analyst's Office, 2005). In contrast, 96 percent of the cases prosecuted under Three Strikes in Washington by March 2006 involved violent offenses (State of Washington Sentencing Guidelines Commission, 2006).[10] Most states' Three Strikes laws are even more narrowly written than Washington's: very few offenses are eligible to be counted as strikes, and all three "strikes" and the current offense must be violent for Three Strikes to be applied (Clark et al., 1997; National Conference of State Legislatures, 1996).

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[9] Alan McKelvie, Director, Statistical Analysis Center, University of Alaska Anchorage Justice Center; Dewey Hall, Acting Manager Statistics and Data Quality, Montana Department of Corrections, and Kelly Dunn, Investigator/Paralegal, Legal Services Bureau, Montana Department of Corrections. Personal communication via e-mail September 15, 2006 and September 29, 2006. Robert K. Cosgrove, Director of MIS/Research, Connecticut Department of Correction; personal communication via e-mail, November 15, 2006. E-mail communication with Judge Robert Yeates, November 8, 2006.

[10] The other thirteen inmates were sentenced for "burglary 1"(Washington State Sentencing Guidelines Commission, 2006).

California's Three Strikes statute was designed to be substantially broader than the Three Strikes law in any other state.[11] This distinction was reaffirmed by California's voters in November 2004, when Proposition 66, a ballot initative that would have brought California's statute more in line with Three Strikes laws in other states by requiring that all three offenses be serious or violent, was defeated at the polls (Furillo, 2004; Lundstrom, 2004; Walters, 2004).[12] Because of the tremendous difference in scope and scale, one might expect California's law to influence crime rates differently than Three Strikes laws in other states. Most research has focused on impacts in California (Auerhahn, 2002, 2003; Greenwood et al., 1994; J. R. Ramirez & Crano, 2003; Shepherd, 2002; Stolzenberg & D'Alessio, 1997; Walsh, 1999; Worrall, 2004). The analysis in this paper examines the effects of Three Strikes legislation in California as well as in the rest of the nation, but the statistical models are designed to treat California's Three Strikes policy as distinct from the policies in other states.

Hypothesis

The primary purpose of the analyses that follow is to determine whether Three Strikes laws have had significantly greater effects on crime in California than elsewhere in the United States. Because California's law affects many more criminals than the law in any other state, the

[11] The unusual breadth of the law may be due in part to the fact that it was originally passed as a ballot initiative. As such, it did not have to withstand the same formal review or fiscal scrutiny that a bill proposed by the Legislature would have undergone. The language of the ballot initiative was drafted not by a professional policymaker, but rather by an irate citizen, grieving over the murder of his daughter, and the public's support for the law was fueled in part by widespread fear and anger over the well-publicized murder of another young girl, Polly Klaas, by a remorseless repeat offender (Moore, 1999).

[12] Because the Three Strikes law was passed as a ballot initiative before a nearly identical bill was passed by the legislature, it can only be repealed or modified by means of a subsequent ballot initiative.

impacts of Three Strikes in California on crime rates are expected to be greater than the effects on the *de minimis* laws in place in most other states that have any such law. The infrequently-applied laws in states other than California are not expected to reduce crime via either deterrence or incapacitation.

Data and Methodology

The unit of observation in the analyses in this paper is the state-year. The data are measured at the state level, and the dataset covers all fifty American states for each of the seventeen years from 1986 through 2005, for a total of one thousand observations. State-level data are substantively appropriate to the task at hand. Three Strikes laws are adopted at the state level of government, and this paper seeks to assess the effects of the law's presence or absence across multiple states. County-to-county heterogeneity in Three Strikes usage exists within the state of California because district attorneys and judges exercise discretion in their implementation of the law (Walsh, 1999; Zimring, Hawkins, & Kamin, 2001), but most states other than California have applied the law so infrequently that an analysis at a lower level of aggregation would not be practical or meaningful. Thus, studies that rely on county-level data are generally limited to examining the effects of Three Strikes in California. A second benefit of state-level data is availability. Time series are available for all of the relevant crime data, multiple measures of economic well-being, demographic statistics including race/ethnicity and age, and budget statistics for all fifty states.

There do exist drawbacks to using state-level data. When city, county, state, or country-level data are used, aggregation bias becomes a concern. Heterogeneity among units is "washed out" when data are combined into average values (Spelman, 2005; Trumbull, 1989). In addition,

aggregate data may result in biased inferences if information loss is nonrandom (G. King, 1997). For example, intentional or unintentional underreporting of crime incidents by certain local police departments, or underreporting of certain types of crimes by individual victims, may lead to county or state-level data that produce biased, sometimes inflated, estimates of deterrent effects (Cherry, 1999; Trumbull, 1989; Worrall & Pratt, 2004). Unfortunately, limitations like these are inherent in studies that rely on aggregate data. Despite the potential shortcomings of state-level data, this level of aggregation is appropriate for the nationwide analysis in this paper. The law has been adopted at the state level, and outside of California, with the exception of only a handful of states that have applied the law to more than a dozen offenders a year, little variance in the number of Three Strikes cases can be found between units smaller than the state, as the number of inmates affected by the law in nearly every county in most years has been zero or close to zero.

Dependent Variables

The analyses that follow examine the impacts of Three Strikes policies on the seven individual crime categories reported annually by local law enforcement agencies to the Federal Bureau of Investigation. They are (1) murder and nonnegligent manslaughter, (2) forcible rape, (3) robbery, (4) aggravated assault, (5) burglary, (6) larceny-theft, and (7) motor vehicle theft.[13] Among these seven offenses, burglary, larceny, and motor vehicle theft can be described as primarily "instrumental crimes" (J. R. Ramirez & Crano, 2003). These offenses, committed for material gain, are likely to involve advance planning or decision-making, while violent offenses, such as homicide, rape, or aggravated assault, are more likely to be committed out of anger or

[13] The Uniform Crime Reports have also included arson since 1978, but the reporting of this offense has been infrequent and inconsistent; thus, arson is almost always omitted from studies using UCR Index Crime statistics.

passion. Although the FBI categorizes robbery as a violent offense, it is usually "instrumental" in nature. The distinction between instrumental and violent offenses may have implications for the effectiveness of deterrence efforts via Three Strikes laws: "instrumental" crimes may be deterred more readily not only because of the more "rational" nature of the offenses, but also because the marginal increases in sentence length are greatest for less-serious felonies that would carry the shortest sentences in the absence of Three Strikes.

Policy Variables

The primary independent variables of interest are those representing the presence of "Three Strikes and You're Out" laws. Additional attention is given in the model to California, which has an anomalous Three Strikes law, and to the state of Washington, which implemented Three Strikes earliest. Washington has one of the most widely implemented policies outside California. The method of coding these policy interventions is explained in further detail below.

As a test of whether other policy changes deserve credit for changes in crime rates, a second policy intervention, Truth in Sentencing, is also included in the model. Truth in Sentencing (TIS) policies, requiring certain sentenced offenders to serve 85 percent or more of their sentences, gained popularity in the United States around the same time that Three Strikes laws began to proliferate. TIS laws with an 85 percent requirement were adopted in 28 states, with encouragement from the U.S. Congress in the form of formula-based federal grants authorized in the 1994 Violent Offender Incarceration/Truth in Sentencing (VOI/TIS) Act (Sabol, Rosich, Kane, Kirk, & Dubin, 2002; Turner, Fain, Greenwood, Chen, & Chiesa, 2001; Turner, Greenwood, Fain, & Chiesa, 2006; U.S. General Accounting Office, 1998). States with TIS in place overlap partially with those that adopted Three Strikes. Separate terms are introduced in the model to represent the presence of Three Strikes and TIS in California, Three

Strikes in Washington, and TIS in Washington. The variable representing California's Three Strikes policy measures changes in the dependent variables that took place after 1994. Since California implemented both Three Strikes and Truth in Sentencing in 1994, it is not possible, using annual data, to separate the effects of Three Strikes from those of Truth in Sentencing.[14] However, Truth in Sentencing laws vary far less from state to state than Three Strikes laws, in part because the U.S. Department of Justice required state TIS laws to satisfy specific criteria in order to earn federal VOI/TIS grants (Turner et al., 2001). The grant program stipulated that states had to require offenders convicted of murder, criminal sexual assault, robbery and aggravated assault to serve at least 85 percent of their sentences, or demonstrate that time served in prison by these offenders averaged at least 85 percent (Ditton & Wilson, 1999). Because of the relative uniformity in TIS policies, California's Truth in Sentencing law is not expected to have effects on crime noticeably different from the effects of TIS policies in other states. In Washington State, TIS with an 85 percent time-served requirement was adopted in 1990, three years before Three Strikes was passed; therefore, the effects of the two policies in Washington can be estimated using two separate independent variables.

Several control variables are included in the analyses, corresponding to factors that are believed to influence crime rates. These include measures of economic well-being (unemployment rate, poverty rate, and median household income), state and local government spending (percent of budget spent on police, corrections, and education), and demographic

[14] In fact, the effects of other, concurrent, policy changes or other factors which may have impacted the dependent variables in these same years would also be "picked up" by these interaction terms, and the same may be true of the other dummy variables for Three Strikes and TIS.

composition of the population (proportion of the population in several different age groups, percent African-American, and percent Hispanic).

Regression Model

The impacts of Three Strikes are empirically estimated in this paper using time-series cross-sectional (TSCS) analysis with fixed effects. This method can be applied when data are available for numerous observations over a series of points in time. TSCS analysis of state-level data is useful for the study of quasi-experiments like state-level policy interventions; it "provides control groups because the other 49 states act as controls when analyzing each individual state law, and permits one to enter a large number of control variables" (Marvell & Moody, 1996). Researchers can look for consistent effects of new legislation in states that have widely varying "starting points" in terms of existing crime rates and whose implementation of new laws occurred in several different years. Other benefits include substantial increases in sample size compared to panel data or time series only data, and therefore more degrees of freedom, which allows for inclusion of more control variables and improves the statistical efficiency of the estimates (Sayrs, 1989; Stimson, 1985).

The linear regression model used here measures whether the implementation of Three Strikes and Truth in Sentencing resulted in faster or slower growth or declines in crime rates. The model has the following functional form:

ln (Dependent Variable) =

$\alpha + \beta_1$ (Underlying trend in Three Strikes states)

$+ \beta_2$ (New trend in Three Strikes states after the law)

$+ \beta_3$ (Three Strikes dummy variable)

$+ \beta_4$ (Underlying trend in California)

$+ \beta_5$ (New trend in California after Three Strikes & TIS)

$+ \beta_6$ (California Three Strikes dummy variable)

$+ \beta_7$ (Underlying trend Washington)

$+ \beta_8$ (New trend in Washington after Three Strikes)

$+ \beta_9$ (New trend in Washington after TIS)

$+ \beta_{10}$ (Washington Three Strikes dummy variable)

$+ \beta_{11}$ (Underlying trend in TIS states)

$+ \beta_{12}$ (New trend in TIS states after the law)

$+ \beta_{13}$ (Unemployment rate)$_{it}$

$+ \beta_{14}$ (Percent of population in poverty)$_{it}$

$+ \beta_{15}$ (Statewide median household income in tens of thousands of 2006 dollars)$_{it}$

$+ \beta_{16}$ (Percent of population that is African-American)$_{it}$

$+ \beta_{17}$ (Percent of population that is Hispanic)$_{it}$

$+ \beta_{18}$ (Percent of population under age 5)$_{it}$

$+ \beta_{19}$ (Percent of population ages 5 to 17)$_{it}$

$+ \beta_{20}$ (Percent of population ages 18 to 24)$_{it}$

$+ \beta_{21}$ (Percent of population ages 25 to 44)$_{it}$

$+ \beta_{22}$ (Percent of population ages 65 and up)$_{it}$

$+ \beta_{23 \ldots 42}$ (Year Fixed Effects)

$+ \beta_{43 \ldots 92}$ (State Fixed Effects)

The dependent variables (crime rates) are natural-logarithm transformed, for ease of interpretation, to approximate a normal distribution more closely, and to reduce

heteroskedasticity. In regressions of the natural logarithm of a dependent variable on untransformed continuous independent variables, the coefficients on the independent variables (e.g. unemployment rate, percentage ages 18-24) can be interpreted as the percentage change in Y (i.e. crime rate) that results from a one unit increase in X, at the mean values of the independent variables. A one-unit increase in each of the dummy variables representing Three Strikes or TIS can be substantively interpreted as the presence of that policy.

The subscript *i* represents state, and the subscript *t* represents year. The term "Year Fixed Effects" represents a series of year dummy variables (1987 to 2005, with 1986 as the reference), and the term "State Fixed Effects" represents a series of state dummy variables. Year fixed effects are necessary because crime trends were not flat before or after the implementation of the law. Crime rates skyrocketed throughout the 1980s, then began to decline shortly before most Three Strikes laws went into effect and continued to fall after the laws were in place. If the downward turn in crime rates preceding the introduction of Three Strikes is not taken into consideration, the crime-reduction impact of the law is likely to be overestimated. Year fixed effects serve as a proxy for the numerous excluded factors that may have influenced national crime trends over the time period covered by the dataset. State fixed effects are included because the rates of crime vary widely from state to state. These fixed effects control for excluded factors that affect interstate variation in crime. Individual dummy variables allow each state to have a different Y-intercept. Because great deal of variation exists between states in the crime rates that serve as dependent variables, the state dummy variables are likely to absorb many of the apparent impacts that might be observed if state fixed effects were omitted. A regression model that includes state fixed effects will therefore produce conservative estimates of the impacts of Three Strikes and other independent variables, only measuring the effects that the

independent variables would have had on changes in crime within states over time (D. R. Johnson, 1995). In this analysis, the results of a test of fixed vs. random effects using an artificial regression approach indicates that the regressors are correlated with the group-specific errors associated with the individual states; the fixed effects specification is more consistent than the random-effects model for these data.[15]

It is quite possible that Three Strikes and non-Three Strikes states differ not only in their levels of crime after the laws' implementation, but also in the rates of change in crime that preceded the adoption of the policy. These differences may even have played a role in states' decisions regarding whether to enact Three Strikes. For example, legislators or voters in states experiencing unusually rapid growth (or slower declines) in crime rates could have been more likely to decide that existing policies were inadequate and Three Strikes was necessary. With this in mind, the variables representing the effects of Three Strikes are designed so that post-Three Strikes trends in crime are measured while controlling for underlying pre-Three-Strikes crime trends. Separate variables represent underlying pre-implementation trends in Three Strikes states and trends in Three Strikes states after Three Strikes. The "Underlying Trend" variable is a simple linear trend, coded 0 for the year *t* of implementation, -1, -2, -3, ... for the years *t-1*, *t-2*, *t-3*, etc., and 1, 2, 3, ... for the years *t+1*, *t+2*, *t+3*, etc.

The "New Trend" variables are coded 0 for all years until adoption, then 1, 2, 3, ... for years after implementation. The coefficients associated with these variables represent the differences between Three Strikes and non-Three Strikes states in the year-to-year changes in crime rates before and after the passage of "Three Strikes and You're Out."

[15] This test was conducted using the "xtoverid" function in STATA because the Hausman test produced undefined results. Details available at http://ideas.repec.org/c/boc/bocode/s456779.html.

In addition, dummy variables representing the presence of Three Strikes nationally, in California, and in Washington are included. One might expect the post-Three-Strikes dummy variable to have a negative and significant coefficient if a new Three Strikes law has had a deterrent effect that would lead some would-be offenders to cease or curtail their criminal activity immediately after the law's adoption. The post-Three-Strikes trend variable would have a negative and significant coefficient if Three Strikes laws have led to effects that grow over time, such as the incapacitation effects associated with increased length of incarceration.

Findings and Discussion

The results of the regression analysis are shown in Table 2 below. For ease of presentation, coefficients corresponding to the individual year and state dummy variables are omitted from the table.

[Table 2 about here]

Effects of Three Strikes on Different Crime Types in California vs. Other States

The analysis produces both expected and unexpected results with regard to the impacts of Three Strikes on crime rates. The coefficient associated with the crime trend in Three Strikes states after the law's adoption is negative and statistically significant for each of the "instrumental offenses": robbery, burglary, larceny-theft, and motor vehicle theft. The effects are not large, but they are consistent. Relative to the declines in crime already taking place nationwide and captured by the year fixed effects, the robbery rate in Three Strikes states fell 3 percent more rapidly, in the years after the law's adoption. The rate of burglary fell 1.8 percent more quickly, larceny-theft fell 1.1 percent faster, and motor vehicle theft fell 2 percent faster in

Three Strikes states each year the law was in place. At first glance, this seems to support the hypothesis that policies intended to deter crime are most effective against offenses that are likely to involve premeditation or rational decision-making, as opposed to "crimes of passion." However, the Three Strikes dummy variable, which is intended to capture deterrent effects, is associated with non-significant coefficients for every category of crime except murder. These findings are somewhat puzzling, particularly because nonviolent offenses like burglary, larceny, and motor vehicle theft are not eligible for sentencing under Three Strikes in most states, and therefore rates of those offenses would not be expected to decline as a result of Three Strikes-related incapacitation effects.

In California, the coefficient on the Three Strikes dummy variable was negative and significant for two offenses: motor vehicle theft ($\beta = -.328$, $p < .05$) and robbery ($\beta = -.271$, $p < .10$), suggesting that some deterrent effects might exist with regard to these types of crime. Contrary to expectations, although statistically significant crime-reduction effects on some crime types were found for Three Strikes policies nationwide, few additional incapacitation effects were measurable in California, the state in which the greatest deterrence and incapacitation effects would be expected. (The moderately-used Three Strikes law in Washington also had no extra effects beyond those shared by Three Strikes states throughout the country.[16])

The preceding findings lead to the question: if about 100,000 offenders have been sentenced under California's Three Strikes law, why would the effects on crime in California be mostly undetectable? A brief examination of prison capacities and populations may provide part

[16] The only statistically significant additional effect of Washington's Three Strikes law was found for burglary, but this effect was in the "wrong" (positive) direction ($p < .05$). Here it may be useful to note that the sheer number of coefficient estimates produced in these analyses virtually guarantees a few "false positive" findings of statistical significance.

of the answer. Table 3 below displays California's prison capacity and prison population statistics for the period from 1986 to 2005. Neither capacity nor population has grown to an extent commensurate with the number of offenders sentenced under Three Strikes. From 1994, the year of the law's passage, until 2005, design capacity increased by 18,884 beds, while the population of the state's severely overcrowded prisons increased by 47,898 inmates. Due to constraints on population growth, the entry to prison of new inmates with mandatory sentences, or lengthened sentences for certain inmates, can occur only if other inmates are released, and a Three Strikes incapacitation effect on crime would be observed only if the inmates leaving prison are less likely to offend than those who are entering or staying longer as a result of the law. Contrary to the theory of "selective incapacitation," California's law could actually create the unintended effect of forcing authorities to use limited prison space to warehouse nonviolent offenders and those who have aged beyond the peak of their "criminal careers."[17] Further research is needed to examine this more closely.

[Table 3 about here]

An alternative explanation may be that a crime reduction effect does exist, but it cannot be measured with statistical significance in this analysis due to the limitations of the statistical tests used here. While the coefficient estimates associated with the California post-Three Strikes trend variables are not statistically significant, the analyses do produce consistently negative coefficients for every crime category except rape.

[17] Unlike many other prisoners, inmates sentenced under Three Strikes may not have their prison terms reduced by more than 20 percent using "good time" credits, while some other inmates may be eligible for up to a 50 percent reduction for "good time" (Legislative Analyst's Office, 2005).

A noteworthy incidental finding from this analysis is that statistically significant and positive coefficients were found for the variable representing the crime trend in Three Strikes states *before* the adoption of the law for robbery, burglary, larceny, and motor vehicle theft. In other words, the states that passed Three Strikes laws did so as they were experiencing slower declines (compared to non-adopting states) in their rates of several crimes. This suggests that the desire to gain greater control over crime rates may have provided an impetus for legislatures or voters (through ballot initiatives) to support and enact "get tough" policies such as Three Strikes.

Another notable finding is that the Three Strikes dummy variable carries a positive and significant ($p < .01$) coefficient for only one category of crime, murder. Murder rates appear to have increased about 12.9 percent more rapidly (or fallen 12.9 percent less rapidly) in states with Three Strikes laws in place. This result is consistent, in both direction and magnitude, with the findings of some prior researchers (Kovandzic et al., 2002, 2004; Marvell & Moody, 2001), who have speculated that the fear of a long mandatory sentence may motivate some criminals to attempt to eliminate witnesses or resist law enforcement officers. It is surprising, however, that the effect is observed nationwide but is not especially pronounced in California, the state with the broadest and most highly publicized Three Strikes law.

Although skeptics might believe that many narrowly-drawn Three Strikes policies may have been designed to create the *appearance* of getting tough on crime while actually being applied to very few offenders, the results of the analysis suggest that some real effects may be observable. On the other hand, given the small number of criminals incarcerated under most Three Strikes laws, the crime effects in Three Strikes states other than California cannot be attributed entirely to the incapacitation of habitual offenders. There are two plausible alternative explanations. The laws may have had deterrent effects that somehow increased over time. This

explanation is consistent with the finding that greater impacts were found for more readily deterred instrumental offenses, though it is unclear why the effects would grow over the years. Another possibility is that one or more variables left out of the model are responsible. For example, the states that adopted Three Strikes may have enacted other crime prevention measures (other than Truth in Sentencing, which is included in the model) along with their Three Strikes policies.

Effects of Other Included Variables

The analysis indicates that Truth in Sentencing (TIS), another sentencing policy that gained popularity at about the same time as Three Strikes, had a far smaller impact on crime than Three Strikes. A statistically significant coefficient is associated with Truth in Sentencing adoption for only one offense category, burglary. There were no additional effects associated with TIS in Washington State or in California. The lack of observable effects of Truth in Sentencing is not very surprising, for a few reasons. TIS extends the length of existing sentences, rather than sending offenders to prison who otherwise would not have been incarcerated. The marginal incapacitation effects associated with TIS do not take effect until the end of the portion of the sentence that an inmate would already have served. TIS is targeted primarily toward violent criminals, though its scope is wider in some states. Finally, the distinction between TIS and non-TIS states is blurred by the fact that many states that did not meet the Department of Justice's 85 percent time served requirement for TIS funding nonetheless increased the proportion of time served by violent offenders (Turner et al., 2006).

Economic factors influence the rates of some crimes, particularly instrumental offenses. The unemployment rate has a positive and significant association with three types of crime, rape, robbery, and burglary. Consistent with criminal opportunity theory (higher rates of poverty

mean fewer attractive targets), the proportion of state residents living in poverty has no effect on violent crime, but it is significantly and negatively associated with the rates of burglary and larceny. The proportion of state and local expenditures spent on corrections is associated with significant and negative coefficients for robbery and motor vehicle theft. The proportions spent on police and education have few significant effects.

The variable representing the percentage of the population that is African-American has a negative and significant coefficient in the models for rape, robbery, burglary, larceny, and motor vehicle theft, indicating that the rates of these offenses are lower where the proportion of African-Americans in the population is higher, when other factors are controlled. Considering the vast literature on the relatively high rates of criminal offending and victimization among African-Americans, this outcome contradicts expectations. However, because this variable is relatively time-invariant within jurisdictions, the coefficient estimates associated with this variable in a fixed-effects model may be unstable (D. R. Johnson, 1995). Due to immigration, the Hispanic proportion of the population has varied more than the African-American population over the time period included in the dataset.[18] This variable is associated with a positive coefficient in the models for burglary, larceny, and motor vehicle theft. As one would expect, the percentage of the population in the most crime-prone age group, 18 to 24, is associated with higher levels of several offenses: murder, rape, burglary, and motor vehicle theft.

The inclusion of variables representing underlying crime trends is essential to the accuracy of analyses of Three Strikes' impacts. When time-series cross-sectional regression

[18] According to the United States Census Bureau, the Hispanic population in the United States has increased by more than 50 percent since 1990 (Guzman, 2001). Forty percent of the Hispanic population is foreign born, and 46 percent of the foreign born population entered the United States between 1990 and 2000 (R. Ramirez, 2004).

analysis is performed on the same data without accounting for underlying crime trends in the model, dramatically different results are produced. An improperly specified analysis using only dichotomous dummy variables, rather than pre- and post-implementation trend variables, to represent the absence or presence of Three Strikes and Truth in Sentencing generates results (not shown here) that appear to indicate that California's Three Strikes law has been an enormous success, attributing declines in crime to California's Three Strikes law ranging from about 17 percent for burglary to 31 percent for motor vehicle theft. When pre- and post-Three Strikes crime trends are included in the models, the analysis reveals that the drops in crime seemingly linked to the uniquely broad Three Strikes policy in California are likely to have occurred even if the state had adopted a more limited Three Strikes policy, as several other states did. These observations support those of a previous study (Worrall, 2004) that also controlled for pre-existing crime trends while using county, rather than state, data.

Conclusions and Policy Implications

"Three Strikes and You're Out" laws have been adopted by half of the American states, but California's policy is much broader than the corresponding habitual offender laws adopted elsewhere. While no other state has incarcerated more than 400 offenders under its Three Strikes law, over 100,000 convictions have resulted from California's policy. Yet, the approach taken in California has not been dramatically more effective at controlling crime than other states' efforts. Some potential reasons for this finding were discussed above, but the question of why a law of this scale and scope has not had greater impacts on crime deserves further attention from researchers.

Despite the limited usage of Three Strikes statutes in states other than California, the law's presence throughout the United States is associated with accelerated rates of decline for robbery, burglary, larceny-theft, and motor vehicle theft, all of which are potentially deterrable "instrumental offenses." This finding, in conjunction with data on the relatively few inmates incarcerated under Three Strikes policies in most states, suggests that any crime reduction associated with the presence of Three Strikes outside California should probably be attributed to deterrence effects rather than incarceration effects.

The analysis finds that pre-existing conditions in states where Three Strikes was passed differed fundamentally from those in states where Three Strikes was not adopted. Before implementing the law, Three Strikes states were experiencing more rapid increases (or slower decreases) in crime trends than non-adopting states. Concern regarding crime rates or patterns may have contributed to the policy decisions made by the public or legislatures in these states. More thorough analysis of factors that contribute to the policy adoption decision, using the passage of Three Strikes as a dependent variable, would be an interesting topic for future research.

This paper's findings regarding Three Strikes' impacts in California may disappoint proponents of that state's approach to Three Strikes. It may, however, provide useful lessons for policymakers to consider in the future. One clear conclusion from the preceding analyses is that the "toughest" sentencing policy is not necessarily the most effective option. The narrowly-constructed and seldom-used habitual offender policies adopted in many states appear to produce results comparable to those observed in California.

Policies like Three Strikes were not the only factors likely to have contributed to the decline in crime throughout the mid- to late 1990s. Other policy initiatives, which were not

operationalized as control variables in the preceding analyses, have been credited with reducing crime as well. These include "zero tolerance" or "quality of life" policing strategies in New York City and other locations (Bratton, 1996; Katz, Webb, & Schaefer, 2001; Kelling & Bratton, 1988), the passage of right-to-carry concealed weapons laws in several states (Lott, 1998; Lott & Mustard, 1997; McDonald, 1999; Plassmann & Tideman, 2001), and many other efforts throughout the United States. Criminologists have also noted that the rise and fall of crack cocaine markets, and the gun violence directly and indirectly related to the drug trade, have coincided with trends in violent crime rates (Beres & Griffith, 1998; Blumstein & Rosenfeld, 1998; Bowling, 1999; Grogger, 2006; B. Johnson, Golub, & Dunlap, 2000; Wallman & Blumstein, 2005; Witkin, 1998). It is possible that the reductions in crime experienced throughout the United States from the early 1990s through the early 2000s resulted from many different forces, including Three Strikes laws in some states, and other, contemporaneous, policy changes in other places.

Some scholars believe that these changes in crime rates can hardly be explained at all. It has been suggested that recent drops in crime in many American cities should primarily be attributed to "regression to the mean" from preceding periods of rapid growth that reached unusually high peaks (Fagan, Zimring, and Kim, 1998). The causes and correlates of rises and declines in crime rates are numerous, diverse, and elusive. Thus, researchers and policymakers must keep in mind that even major changes in sentencing policy may result in only modest impacts on crime rates.

The nonpartisan California Legislative Analyst's Office estimates that the state's Three Strikes policy currently costs approximately $500 million per year to implement, with expenses expected to escalate dramatically in the long run, even if the prison population does not expand

further, due to aging of the inmate population and corresponding growth in medical expenses (Legislative Analyst's Office, 2005). The implementation of a policy as costly as Three Strikes results in inevitable opportunity costs, not only within the criminal justice domain, but also in other vital policy areas. California faced a budget shortfall of $16 billion at the beginning of 2008; in response, the 2008-09 budget set forth by the Governor proposed dramatic across-the-board spending cuts including a reduction of $400 million in payments for K-14 education, cuts in spending for state universities, reductions in medical benefits for the poor, the suspension of a cost-of-living adjustment for Supplemental Security Income (SSI) benefits, and even the early release of some prison inmates (California Legislative Analyst's Office, 2008). Scaling back California's Three Strikes law could free up millions of dollars a year for the preservation of important public goods and services in the nation's most populous state.

Three Strikes, as implemented in California, could be cost-beneficial despite its high price tag if it were shown to save money by reducing crime, but the results of the present study indicate that crime effects of a similar magnitude could have been obtained by more efficient means than California's unusually broad Three Strikes policy. In a 2001 paper entitled "How Large Should the Strike Zone Be?" Caulkins describes the trade-offs involved in designing a Three Strikes statute that is broad in scope (like California's law) or narrow (like the laws in Pennsylvania and most other states). He explains that a narrow law is likely to be more cost-effective, as it will target high-rate offenders to serve the longest sentences; on the other hand, a broad law should be expected to have a bigger impact on crime, but at a far higher cost per crime averted (Caulkins, 2001). To an extent, the results presented above confirm this expectation. In allowing felony offenses that are neither serious nor violent to trigger second- and third-strike sentences, California's policy seems to extend beyond the point of diminishing marginal returns.

Narrowly-constructed laws, such as those in most other states, appear to be associated with slight crime reduction effects for certain categories of offenses, but the additional crime-reducing benefits of California's far broader policy are small or nonexistent for nearly every category of crime, while the costs associated with this extra breadth are considerable.

The law has led to less growth in California's prison population than some initial forecasts predicted (see, for example, Greenwood et al. 1994), due to factors including declines in crime and the exercise of discretion by some prosecutors and judges in the law's implementation (California District Attorney's Association, 2004; Walsh, 2004).[19] Nevertheless, over 100,000 individuals have already received either second- or third-strike sentences since the law took effect in 1994 (Legislative Analyst's Office, 2005). Along with financial costs, the increased rate of incarceration imposes enormous human and social costs for sentenced individuals, their families, and the communities from which inmates come and to which many of them eventually return (for discussion, see e.g. Mauer & Chesney-Lind, 2002; Travis, 2002; Travis & Waul, 2003). In California, these social costs are borne disproportionately by African-American men, who constitute only about 3 percent of the state's population but represent approximately 33 percent of second-strikers and 44 percent of third-strikers among California prison inmates (California Department of Corrections and Rehabilitation, 2008; United States

[19] "In the furtherance of justice," prosecutors and judges retain the discretion to dismiss some prior strike offenses in order to avoid triggering a second-or third-strike sentence (Legislative Analyst's Office, 2005). For certain offenses known as "wobblers," prosecutors also have the authority to charge cases either as felonies, which could lead to second- or third-strike sentences for offenders with prior "strikes," or misdemeanors, which carry a maximum sentence of one year in jail (Legislative Analyst's Office, 2005; Ricciardulli, 2002).

Census Bureau, 2006).[20] Thus, another non-monetary cost of California's Three Strikes law may be erosion of the perception of fairness and legitimacy in the state's criminal sentencing process, particularly among the most heavily impacted populations.

Three Strikes is one of numerous "get-tough" policies adopted throughout the United States in response to concerns about rising crime rates in the 1990s. The evidence presented above indicates that the presence of a Three Strikes law is associated with modest crime reduction effects nationally, and that California's version of the law is not considerably more effective at crime reduction than alternative methods that are narrower in scope. Regardless of its limited effects on crime, however, California's Three Strikes policy will continue to produce tremendous and lasting ramifications for prison population growth, state budgets, and tens of thousands of human lives, unless the state's voters decide to reduce the scope of the law at some point in the future.

[20] Overrepresentation of African-Americans among those sentenced under Three Strikes has been found to persist even when variables such as current offense and prior record are controlled (Chen, 2008).

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Table 1: "Three Strikes" and Similar Repeat Offender Laws in the United States[21]

State	Year Passed (Amended)	Law
Alaska	2006	Stat. § 12.55.125
Arkansas	1995	S 123
California	1994	A 971 and Proposition 184
Colorado	1994	S 196
Connecticut	1994	H 5385
Florida	1995	S 168
Georgia	1994	S 441
Indiana	1994	H 1063
Kansas	1994	H 2788
Louisiana	1994 (1995)	H 18
Maryland	1994	H 1112
Montana	1995	S 66
Nevada	1995	A 317
New Jersey	1995	A 318
New Mexico	1994	S 73 and 742, Chapter 24
North Carolina	1994	H 39, Part 6, Chapter 22
North Dakota	1995	H 1218
Pennsylvania	1995	H 93
South Carolina	1995	H 3096
Tennessee	1994 (1995)	H 2759
Utah	1995	H 46
Vermont	1995	S 51
Virginia	1994 (1995)	H 273
Washington	1993	Initiative 593
Wisconsin	1994	1993 S 781, Act 289

[21] Source for all states except Alaska: National Conference of State Legislatures, "Three Strikes" Legislation Update, December 1997. Alaska law information obtained via personal communication with Ms. Teri Carnes, Senior Staff Associate, Alaska Judicial Council, September 22, 2006.

Table 2: Regression Results (Dependent Variables ln-transformed)

	Murd.	Rape	Robb.	Aggr. Asslt.	Burg.	Larc.	MV Theft
	Coef.	**Coef.**	**Coef.**	**Coef.**	**Coef.**	**Coef.**	**Coef.**
	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.
Underlying trend in 3-strikes states	**0.005**	**-0.006**	**0.023** ***	**0.005**	**0.014** ***	**0.006** **	**0.020** ***
	0.008	0.005	0.006	0.006	0.004	0.003	0.007
Trend in 3-strikes states after 3-strikes	**-0.007**	**-0.006**	**-0.030** ***	**0.006**	**-0.018** ***	**-0.011** ***	**-0.023** ***
	0.009	0.006	0.008	0.008	0.005	0.004	0.008
3-strikes dummy	**0.129** ***	**0.037**	**-0.045**	**0.008**	**-0.020**	**-0.007**	**0.003**
	0.048	0.031	0.038	0.038	0.024	0.020	0.041
Underlying trend in CA	**0.026**	**-0.026**	**0.018**	**0.012**	**-0.013**	**-0.022**	**-0.019**
	0.032	0.021	0.026	0.026	0.016	0.013	0.028
Trend in CA after 3-strikes	**-0.026**	**0.003**	**-0.037**	**-0.043**	**0.007**	**0.020**	**0.045**
	0.037	0.024	0.030	0.030	0.018	0.015	0.032
CA 3-strikes dummy	**-0.230**	**0.015**	**-0.271** *	**-0.072**	**-0.081**	**-0.100**	**-0.328** **
	0.194	0.128	0.156	0.157	0.096	0.081	0.167
Underlying trend in WA	**-0.046**	**0.053**	**-0.007**	**0.007**	**-0.076** *	**-0.043**	**0.017**
	0.081	0.053	0.065	0.065	0.040	0.034	0.070
Trend in WA after 3-strikes	**0.016**	**0.007**	**0.025**	**-0.033**	**0.078** **	**0.009**	**0.047**
	0.062	0.041	0.050	0.050	0.031	0.026	0.054
WA 3-strikes dummy	**0.150**	**-0.077**	**0.037**	**-0.019**	**0.120**	**0.014**	**0.051**
	0.198	0.130	0.160	0.160	0.098	0.083	0.170
Trend in WA after TIS	**0.016**	**-0.075**	**-0.017**	**0.007**	**0.018**	**0.038**	**-0.006**
	0.125	0.083	0.101	0.101	0.062	0.052	0.108
Underlying trend in TIS states	**-0.004**	**-0.004**	**-0.003**	**0.000**	**0.003** **	**0.001**	**0.012** ***
	0.004	0.002	0.003	0.003	0.002	0.001	0.003
Trend in TIS states after TIS	**-0.001**	**0.001**	**-0.004**	**0.003**	**-0.005** **	**-0.001**	**-0.007**
	0.005	0.003	0.004	0.004	0.002	0.002	0.004
Unemployment rate	**0.007**	**0.013** **	**0.015** **	**-0.039** ***	**0.013** ***	**-0.003**	**-0.005**
	0.009	0.006	0.007	0.007	0.004	0.004	0.008
% of pop. in poverty	**-0.004**	**0.003**	**0.000**	**0.000**	**-0.007** ***	**-0.008** ***	**0.001**
	0.005	0.003	0.004	0.004	0.002	0.002	0.004

Table 2, Continued

	Murd.	Rape	Robb.	Aggr. Asslt.	Burg.	Larc.	MV Theft
	Coef.	**Coef.**	**Coef.**	**Coef.**	**Coef.**	**Coef.**	**Coef.**
	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.	S.E.
Median HH income	**0.000** *	**0.000** ***	**0.000** ***	**0.000**	**0.000**	**0.000**	**0.000** ***
	0.000	0.000	0.000	0.000	0.000	0.000	0.000
% of state/local expenditures on police	**0.023**	**-0.031**	**-0.030**	**0.010**	**-0.021**	**-0.006**	**-0.029**
	0.027	0.018	0.022	0.022	0.013	0.011	0.023
% of state/local exp. on corrections	**-0.009**	**-0.005**	**-0.019** *	**0.015**	**-0.011**	**-0.008**	**-0.031** ***
	0.014	0.009	0.011	0.011	0.007	0.006	0.012
% of state/local exp. on education	**0.007** ***	**0.002**	**-0.001**	**0.001**	**-0.001**	**-0.002**	**-0.003**
	0.002	0.002	0.002	0.002	0.001	0.001	0.002
% of pop. black	**0.025**	**-0.066** ***	**-0.029** **	**-0.005**	**-0.024** ***	**-0.017** **	**-0.070** ***
	0.018	0.012	0.014	0.014	0.009	0.007	0.015
% of pop. Hispanic	**-0.001**	**0.000**	**0.000**	**0.002**	**0.002** ***	**0.002** **	**0.005** ***
	0.002	0.001	0.001	0.001	0.001	0.001	0.002
% of pop. under age 5	**0.023**	**-0.150** ***	**-0.004**	**0.055** **	**0.028** **	**0.038** ***	**0.188** ***
	0.027	0.018	0.021	0.022	0.013	0.011	0.023
% of pop. ages 5-17	**-0.017** *	**-0.008**	**-0.053** ***	**-0.055** ***	**-0.060** ***	**-0.031** ***	**-0.085** ***
	0.010	0.007	0.008	0.008	0.005	0.004	0.009
% of pop. ages 18-24	**0.060** ***	**0.063** ***	**0.017**	**0.012**	**0.012** **	**0.002**	**0.050** ***
	0.013	0.008	0.010	0.010	0.006	0.005	0.011
% of pop. ages 25-44	**-0.006**	**0.030** ***	**0.003**	**-0.021** ***	**0.012** ***	**0.006**	**-0.024** ***
	0.009	0.006	0.007	0.007	0.004	0.004	0.008
% of pop. ages 65 and up	**-0.013**	**-0.025** **	**0.063** ***	**0.080** ***	**0.038** ***	**0.003**	**0.082** ***
	0.015	0.010	0.012	0.012	0.008	0.006	0.013
(Yr. 1987-2005 dummies omitted)							
Constant	**0.829** **	**3.536** ***	**4.561** ***	**5.719** ***	**7.237** ***	**8.341** ***	**5.574** ***
	0.400	0.263	0.322	0.324	0.199	0.167	0.344
R-squared within	0.467	0.453	0.476	0.379	0.830	0.648	0.423
R-squared between	0.459	0.057	0.194	0.070	0.154	0.009	0.065
R-squared overall	0.443	0.022	0.112	0.014	0.004	0.020	0.033
N	999	999	999	999	999	999	999

Table 3: California Prison Capacity and Prison Population, 1986-2005[22]

Year	Design Capacity	Prison Population
1986	32,853	57,725
1987	41,094	64,812
1988	46,279	73,780
1989	48,311	84,338
1990	52,698	94,122
1991	55,692	98,515
1992	57,367	105,467
1993	63,293	115,573
1994	68,366	121,084
1995	71,641	131,745
1996	72,621	142,865
1997	76,352	152,739
1998	79,875	159,201
1999	80,272	160,517
2000	80,467	160,412
2001	79,957	157,295
2002	80,587	161,361
2003	80,487	164,487
2004	80,890	166,556
2005	87,250	168,982

[22] Sources: United States Department of Justice, Bureau of Justice Statistics. Prisoners in [Year] reports, 1986 through 2005.